

Amendments to The Claims

This listing of claims will replace all prior versions, and listings of claims in the application.

Claims Listing

We claim:

1. (original) A curable aqueous composition comprising
 - (a) a polyacid comprising at least two carboxylic acid groups, anhydride groups, or salts thereof;
 - (b) a polyol comprising at least two hydroxyl groups; and
 - (c) an emulsion polymer comprising, as copolymerized units, greater than 30% by weight, based on the weight of said emulsion polymer solids, ethylenically unsaturated acrylic monomer comprising a C₅ or greater alkyl group;
wherein the ratio of the number of equivalents of said carboxylic acid groups, anhydride groups, or salts thereof to the number of equivalents of said hydroxyl groups is from 1/0.01 to 1/3, and wherein said carboxylic acid groups, anhydride groups, or salts thereof are neutralized to an extent of less than 35% with a fixed base.
2. (original) The curable aqueous composition of claim 1 wherein said polyacid is an addition polymer comprising at least one copolymerized ethylenically unsaturated carboxylic acid-containing monomer.
3. (original) The curable aqueous composition of claim 1 wherein said polyol is a compound with a molecular weight less than 1000 bearing at least two hydroxyl groups.
4. (original) The curable aqueous composition of claim 3 wherein said polyol is a hydroxylamine selected from the group consisting of diisopropanolamine, 2-(2-aminoethylamino)ethanol, triethanolamine, tris(hydroxymethyl)aminomethane, and diethanolamine.

5. (original) The curable aqueous composition of claim 1 wherein said emulsion polymer is present in an amount of from 1% to 20%, by weight based on the sum of the weight of the polyacid and the weight of the polyol, all weights being taken on a solids basis.
6. (original) The curable aqueous composition of claim 1 further comprising a Phosphorous-containing species.
7. (original) The curable aqueous composition of claim 1 further comprising from 0.5% to 20% by weight, based on the solids content of said emulsion polymer, surfactant having an HLB value of greater than 15.
8. (original) A method for treating a substrate comprising:
 - (a) forming a curable aqueous composition comprising admixing
 - (1) a polyacid comprising at least two carboxylic acid groups, anhydride groups, or salts thereof;
 - (2) a polyol comprising at least two hydroxyl groups; and
 - (3) an emulsion polymer comprising, as copolymerized units, greater than 30% by weight, based on the weight of said emulsion polymer solids, ethylenically unsaturated acrylic monomer comprising a C₅ or greater alkyl group; wherein the ratio of the number of equivalents of said carboxylic acid groups, anhydride groups, or salts thereof to the number of equivalents of said hydroxyl groups is from 1/0.01 to 1/3, and wherein said carboxylic acid groups, anhydride groups, or salts thereof are neutralized to an extent of less than 35% with a fixed base, and
 - (b) contacting said substrate with said curable aqueous composition; and
 - (c) heating said curable aqueous composition at temperature of from 120 °C to 400 °C.
9. (original) The method of claim 8 wherein said substrate is a heat-resistant fiber or a heat-resistant nonwoven formed therefrom.

10. (original) A heat-resistant nonwoven prepared by the method of claim 9.
11. (new) A curable aqueous composition comprising
 - (a) a polyacid comprising at least two carboxylic acid groups, anhydride groups, or salts thereof;
 - (b) a polyol comprising at least two hydroxyl groups; and
 - (c) an emulsion polymer comprising, as polymerized units, greater than 30% by weight, based on the weight of said emulsion polymer solids, ethylenically unsaturated acrylic monomer comprising a C₅ or greater alkyl group;
wherein the ratio of the number of equivalents of said carboxylic acid groups, anhydride groups, or salts thereof to the number of equivalents of said hydroxyl groups is from 1/0.01 to 1/3.
12. (new) The curable aqueous composition of claim 11 wherein said polyacid is an addition polymer comprising at least one copolymerized ethylenically unsaturated carboxylic acid-containing monomer.
13. (new) The curable aqueous composition of claim 11 wherein said polyol is a compound with a molecular weight less than 1000 bearing at least two hydroxyl groups
14. (new) The curable aqueous composition of claim 13 wherein said polyol is a hydroxylamine selected from the group consisting of diisopropanolamine, 2-(2-aminoethylamino)ethanol, triethanolamine, tris(hydroxymethyl)aminomethane, and diethanolamine.

15. (new) The curable aqueous composition of claim 11 wherein said emulsion polymer is present in an amount of from 1% to 20%, by weight based on the sum of the weight of the polyacid and the weight of the polyol, all weights being taken on a solids basis.
16. (new) The curable aqueous composition of claim 11 further comprising a Phosphorous-containing species.
17. (new) The curable aqueous composition of claim 11 further comprising from 0.5% to 20% by weight, based on the solids content of said emulsion polymer, surfactant having an HLB value of greater than 15.
18. (new) A method for treating a substrate comprising:
 - (a) forming a curable aqueous composition comprising admixing
 - (1) a polyacid comprising at least two carboxylic acid groups, anhydride groups, or salts thereof;
 - (2) a polyol comprising at least two hydroxyl groups; and
 - (3) an emulsion polymer comprising, as polymerized units, greater than 30% by weight, based on the weight of said emulsion polymer solids, ethylenically unsaturated acrylic monomer comprising a C₅ or greater alkyl group; wherein the ratio of the number of equivalents of said carboxylic acid groups, anhydride groups, or salts thereof to the number of equivalents of said hydroxyl groups is from 1/0.01 to 1/3, and
 - (b) contacting said substrate with said curable aqueous composition; and
 - (c) heating said curable aqueous composition at temperature of from 120 °C to 400 °C.
19. (new) The method of claim 18 wherein said substrate is a heat-resistant fiber or a heat-resistant nonwoven formed therefrom.